

ABSTRACT OF THE DISCLOSURE

The invention provides phosphonated poly(4-phenoxybenzoyl-1,4-phenylene), and synthesizing method thereof, an antioxidant formed of phosphonated poly(4-phenoxybenzoyl-1,4-phenylene), a high-durability polymer electrolyte composite formed of a fluoropolymer electrolyte and phosphonated poly(4-phenoxybenzoyl-1,4-phenylene), and a fuel cell in which the high-durability polymer electrolyte composite is used in an electrode thereof.